



Bolton & Vernon Bermuda Workshop

19-25 July 2004

Jeremy Werdell

Science Systems and Applications, Inc.

NASA SeaWiFS Project

GSFC Code 970.2

Greenbelt, MD 20771, USA

~ a presentation for the OCDPS staff ~



ABSTRACT

Over 30 years ago, educators in central Connecticut developed the Bolton / Vernon Bermuda Workshop as a means of introducing middle- and high-school students to subtropical island ecology. Several times a year, after months of classroom preparation, approximately 20 top students spend one week at the Bermuda Biological Station for Research, Inc. studying the local flora and fauna in both the field and laboratory. The curriculum includes an additional array of activities, ranging from historical and ecological tours to spelunking, and culminates in a series of field-observation-related presentations. In July 2004, Jeremy Werdell, a Staff member of the NASA SeaWiFS Project (Code 970.2, Science Systems and Applications, Inc.), participated in the Workshop as an Instructor. Mr. Werdell added several components to the curriculum, including lessons in ocean color, satellite remote-sensing (e.g., SeaWiFS and MODIS), and bio-optics. In addition, students were instructed in the use of several handheld instruments provided by the NASA SIMBIOS Instrument Pool, and in the use of SeaDAS (SeaWiFS Data Analysis System, 2003 NASA Software of the Year). The SeaWiFS and SIMBIOS Projects have supported Mr. Werdell as an Instructor for the Workshop since 2003.



SOME HISTORY

Program initiated in early 1970's

Vernon & Bolton, Connecticut (suburbs east of Hartford)

20 top 8th grade students (occasionally, 9th-12th grade)

Rigorous selection process for students

Months of classroom & pool instruction in Connecticut

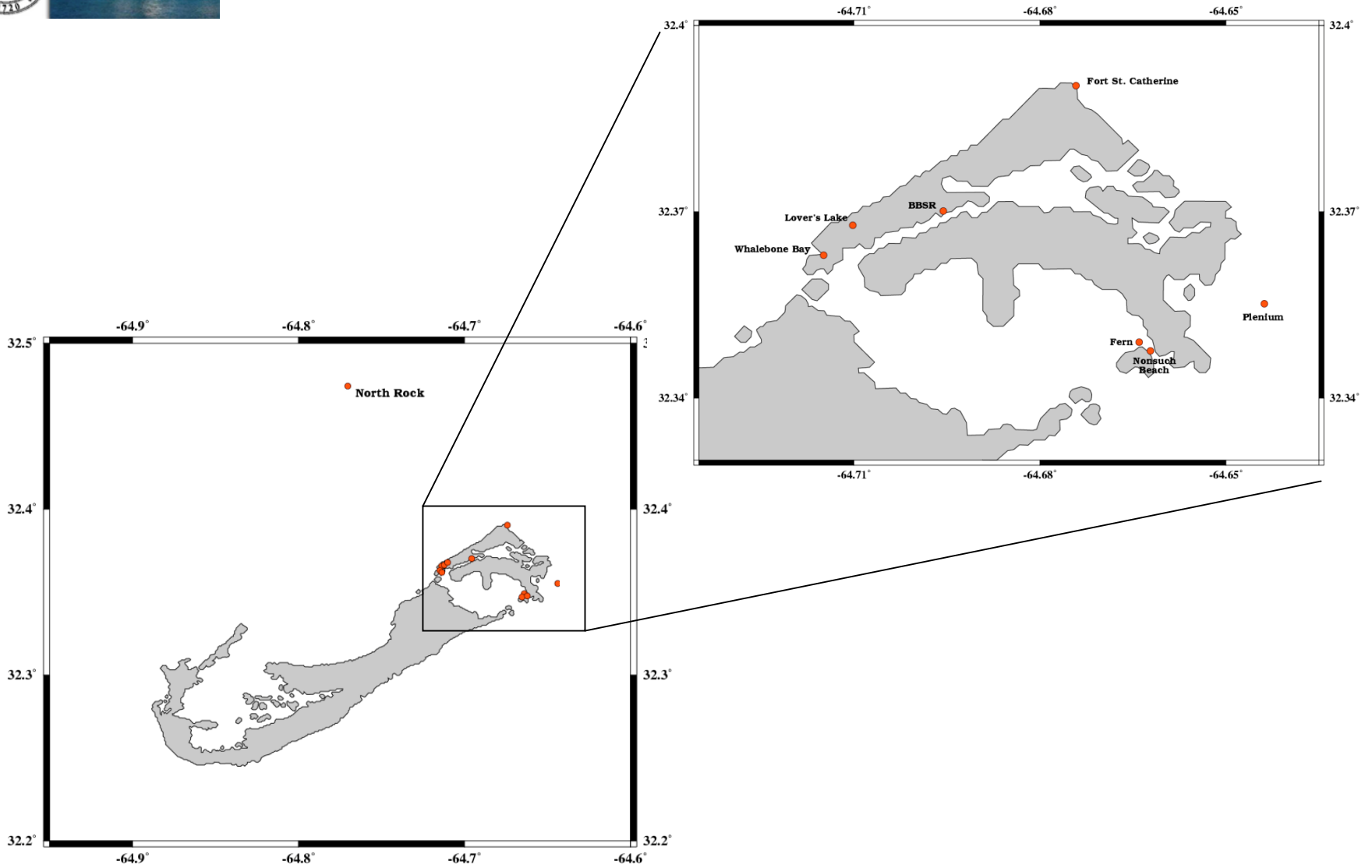
1-week at Bermuda Biological Station for Research, Inc. (BBSR)

Course in subtropical island and marine ecology

I was a student in 1988 ~ I have been an instructor since 2003



LOCALE





ACCOMODATIONS





ACCOMODATIONS





DAILY SCHEDULE

Breakfast

8 am - noon: **field**

Lunch

12:30 - 4:30 pm: **field**

Break

Dinner

6:30 - 10 pm: **lab & classroom**

10:30 pm: lights out

field activities

field observations *
low-tide collecting
BAMZ behind-the-scenes
historical tours
ecological tours
spelunking
snorkeling

lab & classroom activities

organism observation
fish presentation
field observation project *
plant walks
NASA presentation
drawing & sketching
journal writing
Quiz Bowl



FIELD ACTIVITIES





FIELD ACTIVITIES





FIELD ACTIVITIES



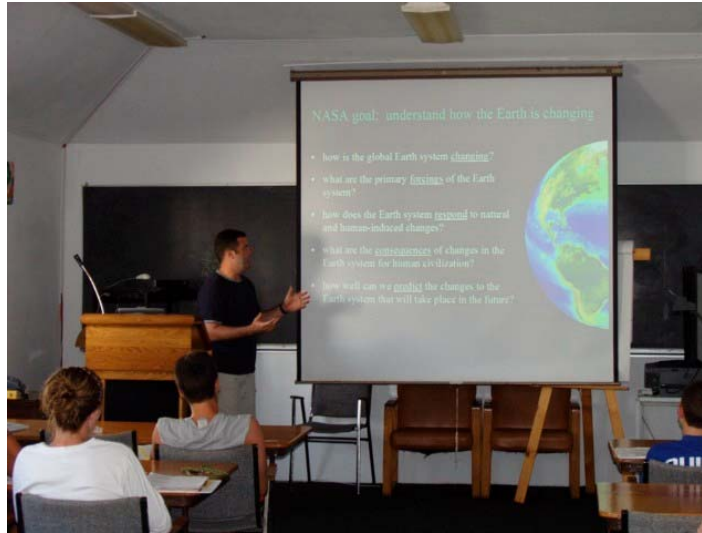


LAB & CLASSROOM ACTIVITIES





LAB & CLASSROOM ACTIVITIES





FIELD OBSERVATION GROUP PROJECTS

weather

air temperature
water temperature
sand temperature
tide pool temperature
water salinity
tide pool salinity
pH
dissolved oxygen
relative humidity
wind speed
cloud cover
water vapor
aerosol optical thickness

every hour

9 am - 3 pm

transect

elevation change
100 meter transect
6 meter drop

quadrat

ecological observation
biological & geological sketches
every meter along transect

map

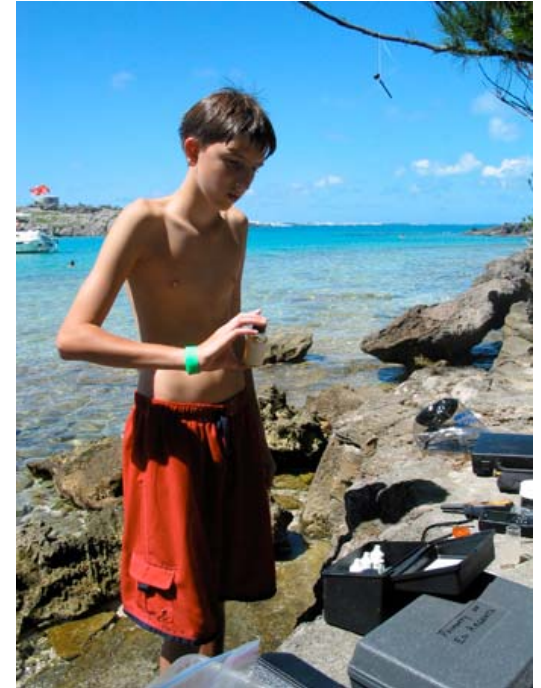
summary of biology & geology
~ land & marine ~
observations in area

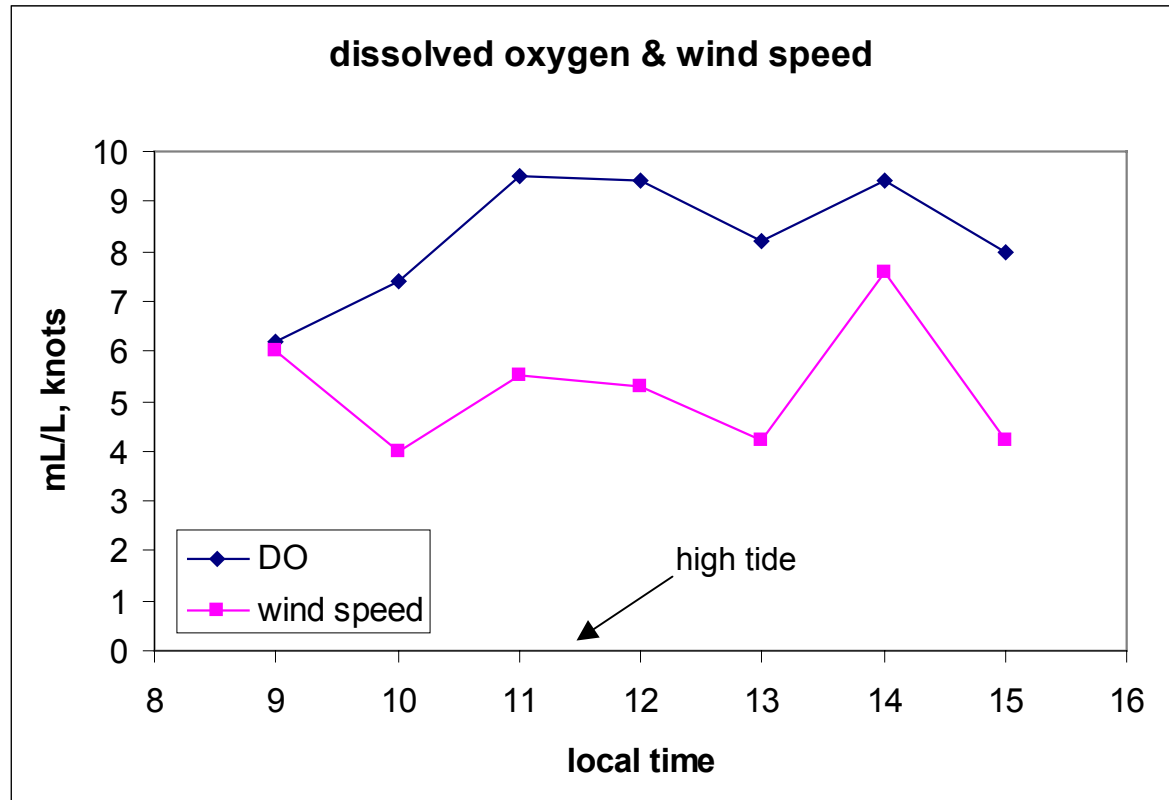
summary

multi-year record of these observations



WEATHER GROUP







SURROUNDING AREA





SURROUNDING AREA





SURROUNDING AREA





SURROUNDING AREA





SURROUNDING AREA





THE END

